

CATALOGUE OF THE ASTEROIDEA AND OPHIUROIDEA IN THE  
COLLECTION OF THE ACADEMY OF NATURAL SCIENCES  
OF PHILADELPHIA.

BY J. E. IVES.

The following catalogue will be found to contain a number of localities that are new for various species.

Two new forms of Star-fishes and two new forms of Ophiurans from the collection have recently been described in the Proceedings of the Academy.

A large proportion of the Pacific forms are contained in a collection given to the Academy by Mr. W. N. Lockington. Many of his specimens unfortunately have no locality indicated. The majority of them, however, were collected on the west coast of North and Central America, but there are also forms from Alaska, Japan, New Zealand and the Pacific Islands.

ASTEROIDEA.

ASTERIIDÆ.

- ASTERIAS ÆQUALIS, Stimpson. 5 San Francisco, Cal., 4 Seal Rock, San Francisco, Cal. and 50 locality undetermined, W. N. Lockington.
- ASTERIAS ARENICOLA, Stimpson. 4 Atlantic City, F. M. Beamer; 5 dried and 50 alcoholic, H. A. Pilsbry; 1 U. C. Smith; 1 Fort Macon, N. C., Dr. H. C. Yarrow; 1 (alcoholic) Gloucester, Mass. and 1 Vineyard Sound, Mass., U. S. Fish Commission; 1 Massachusetts Bay, Museum of Comparative Zoology; 1 Point Judith, R. I., Dr. Jos. Leidy.
- ASTERIAS ATLANTICA, Verrill. 13 (alcoholic) Bermuda, Heilprin coll. July 1888.
- ASTERIAS CAMTSCHATICA, Brandt (?). 1 locality undetermined, W. N. Lockington.
- ASTERIAS CAPITATA, Stimpson. 3 San Diego, Cal., Joseph Jeanes; 1 Santa Barbara, Cal., and 1 locality undetermined, W. N. Lockington.
- ASTERIAS (LEPTASTERIAS) COMPTA, Verrill. 6 Noank, Conn., Dr. Jos. Leidy; 2 (alcoholic) off Watch Hill, R. I. (22 fath.) U. S. Fish Commission.

ASTERIAS EPICHLORA, Brandt (?). 1 locality undetermined, W. N. Lockington.

ASTERIAS FABRICII, Agassiz. 3 Greenland, Museum of Comparative Zoology; 1 Newport, R. I., S. Powel.

ASTERIAS FORBESII, Verrill. 15 (alcoholic) Holmes' Holl, Mass., Dr. J. H. Slack; 3 Newport, R. I., S. Powel; 5 (alcoholic) Vineyard Sound, Mass., U. S. Fish Commission; 8 specimens undetermined (4 alcoholic).

ASTERIAS GIGANTEA, Stimpson. 4 locality undetermined, W. N. Lockington.

ASTERIAS GLACIALIS, Linck. 1 "British," E. Wilson.

ASTERIAS LURIDA, Philippi (?). 3 San Diego, Cal., Joseph Jeanes (H. Hemphill); 3 locality undetermined, W. N. Lockington.

ASTERIAS OCHRACEA, Brandt. 1 (alcoholic) Oregon, Smithsonian Inst.; 1 San Francisco, Cal., Museum of Comparative Zoology; 2 T. G. Watson; 2 Santa Cruz, Cal., John Ford; 6 locality undetermined, W. N. Lockington.

ASTERIAS RUBENS, L. 2 Belfast Bay, Wm. Thompson; 25 England, Dr. T. B. Wilson.

ASTERIAS SERTULIFERA, Xantus (?). 1 locality undetermined.

ASTERIAS VULGARIS, Stimpson. 30 (alcoholic) Gay Head, Martha's Vineyard, Mass., Heilprin coll. 1886; 3 Grand Menan, and 2 Massachusetts, Museum of Comparative Zoology; 1 (alcoholic) Halifax, N. S., U. S. Fish Commission; 8 Maine, Dr. J. H. Slack; 1 (alcoholic) Mt. Desert, Me., Dr. H. C. Chapman; 2 Long Branch, N. J., Dr. J. L. LeConte.

ASTERIAS, species undetermined. 2 Guaymas, J. W. Wilson, U. S. N.; 1 New Zealand, Messrs. Warwick and Argent; 2 Sandwich Islands, J. K. Townsend; 2 dissimilar forms, localities undetermined, W. N. Lockington.

HELIASTER HELIANTHUS, Lam. 1 Chili, W. W. Drinker.

HELIASTER MICROBRACHIA, Xantus. 1 Chili, W. W. Drinker; 1 Magdalena Bay, Low. Cal., W. N. Lockington. (Fischer coll.)

HELIASTER MULTIRADIATA, Gray (= H. Kubinijii, Xantus). 1 Lower California and 1 (young) locality undetermined, W. N. Lockington; 1 (alcoholic) Machuoha, Nicaragua, Dr. Bransford; 2 dried and 3 alcoholic, Pacific Coast of Mexico, Dr. W. H. Jones; 2 locality undetermined.

**BRISINGIDÆ.**

*CORONASTER BISPINOSUS*, Ives. A single specimen. Type, Proc. Acad. 1888, p. 422. Locality undetermined.

**ECHINASTERIDÆ.**

*ECHINASTER ECHINOPHORUS*, Lam. 6 New Providence, Bahamas, Dr. H. C. Wood.

*ECHINASTER FALLAX*, M. and T. (?). 1 Pacific Islands, W. N. Lockington.

*ECHINASTER SENTUS*, Say. 2 Key West, Florida, Lieut. Gandtt (Proc. Acad. 1825. p. 143).

*ECHINASTER SPINULOSUS*, Verrill. 4 (alcoholic) Anclote Bay, Florida, and 2 (alcoholic) (12 ft.) Sarasota Bay, Florida, Heilprin coll. 1886.

*ECHINASTER TENUI SPINA*, Verrill. 2 (alcoholic) Bay of Pichilique, W. Coast of America, Dr. W. H. Jones; 1 Monterey, Cal., and 12 locality undetermined, W. N. Lockington.

*CRIBRELLA LEVIUSCULA*, Stimpson. 6 (alcoholic) Marmot Island, Northwest Coast of America, Dr. W. H. Jones; 1 locality undetermined, W. N. Lockington.

*CRIBRELLA SANGUINOLENTA*, Müller. 2 Belfast Bay, Wm. Thompson; 2 "British," E. Wilson; 2 Manchester, Mass., S. Tufts, Jr.; 3 (alcoholic) Massachusetts Bay, U. S. Fish Commission; 12 Maine and 7 (alcoholic) Nahant, Mass., Dr. J. H. Slack; 3 Noank, Conn., Dr. Jos. Leidy; locality undetermined.

*MITHRODIA CLAVIGERA*, Lam. 1 (alcoholic) Oahu, Sandwich Islands, Dr. W. H. Jones.

*SOLASTER DECEMRADIATA*, Brandt. 1 California, W. N. Lockington.

*SOLASTER ENDECA*, Gmel. 1 dried and 5 alcoholic, Mt. Desert, Me., Dr. H. C. Chapman.

*SOLASTER PAPPOSA*, L. 1 (alcoholic) Mediterranean, Dr. Howel; 3 (alcoholic) Mt. Desert, Me., Dr. H. C. Chapman.

*ACANTHASTER ELLISII*, Gray. 1 Gulf of California, W. N. Lockington (Fisher coll.).

**LINCKIIDÆ.**

*LINCKIA GUILDINGII*, Gray. 1 Bermuda, Mr. Janney; 1 San Diego, Cal., Jos. Jeanes (H. Hemphill); 5 locality undetermined, W. N. Lockington; 1 locality undetermined.

The specimens received from Mr. Lockington resemble the single specimen presented by Mr. Joseph Jeanes from San Diego, Cal. They are small, the largest not exceeding 8 mm. in diameter, but otherwise thoroughly agree with descriptions of *Linkia Guildingii*. This species has not been recorded before from the West Coast of North America.

*LINCKIA LEVIGATA*, Lam. (= *L. Pacifica*, Gray). 3 Navigator's Isles, Dr. Eckstein; 1 Navigator's Isles and 3 Arica, Peru, Dr. W. S. W. Ruschenberger.

*LINCKIA NODOSA*, Perrier. 2 locality undetermined.

*LINCKIA UNIFASCIALIS*, Gray. 1 Central America, Dr. LeConte; 2 Honduras, Capt. J. M. Dow; 1 Lower California, Wm. M. Gabb; 2 Magdalena Bay, Low. Cal., W. N. Lockington; 2 Pacific Coast of Mexico, Dr. W. H. Braden; 2 (alcoholic) Panama, McNeil Expedition; 7 (alcoholic) Pichilique Bay, West Coast of America, Dr. W. H. Jones; 3 localities undetermined, W. N. Lockington.

*LINCKIA*, species undetermined. 1 Christmas Island, W. N. Lockington.

This specimen does not appear to be *Linckia levigata* Lam. (*L. Pacifica*, Gray), the only species of *Linckia* recorded from Christmas Island by Prof. F. Jeffrey Bell.

*LINCKIA*, species undetermined. 1 Lower California, W. M. Gabb.

*OPHIDIASTER GRACILIS*, Gray. 1 locality undetermined, W. N. Lockington.

*OPHIDIASTER PUSILLUS*, M. and T. 5 (alcoholic) Oahu, Sandwich Islands, Dr. W. H. Jones.

*OPHIDIASTER PYRAMIDATUS*, Gray. 1 Honduras, Capt. J. M. Dow; 1 La Paz, Low. Cal., and 1 Magdalena Bay, Low. Cal., W. N. Lockington; 6 (alcoholic) Panama Bay, McNeil Expedition; 1 (alcoholic) Pichilique Bay, West Coast of America, Dr. W. H. Jones.

*OPHIDIASTER*, species undetermined. 1 West Coast of Honduras, Capt. J. M. Dow; 3 locality undetermined.

#### GONIASTERIDÆ.

*PENTAGONASTER DILATATUS*, Perrier. 1 New Zealand, Messrs. Warwick and Argent.

*PENTAGONASTER (STELLASTER) EQUESTRIS*, Retzius. 1 New Zealand, Messrs. Warwick and Argent.

- PENTAGONASTER GRANULARIS, O. F. Müller. (Alcoholic) Marmot Island, Alaska, Dr. W. H. Jones; 1 Monterey, Cal., W. N. Lockington (W. G. W. Harford).
- PENTAGONASTER PULCHELLUS, Gray. 1 New Zealand, Messrs. Warwick and Argent.
- PENTAGONASTER SEMILUNATUS, Linck. 1 New Zealand, Messrs. Warwick and Argent.
- PENTAGONASTER, species undetermined. 1 locality undetermined, W. N. Lockington.
- ANTHENEAE ACUTA, Perrier (?). 2 (alcoholic) locality undetermined.
- ANTHENEAE TUBERCULOSA, Gray (?). 1 New Zealand, Messrs. Warwick and Argent.
- OREASTER (NIDORELLIA) ARMATA, Gray. 1 Guaymas, J. W. Wilson; 1 La Paz, Low. Cal., W. N. Lockington (W. J. Fisher coll.); 1 Panama Bay, Dr. W. S. W. Ruschenberger; 1 (alcoholic) Panama, McNeil Expedition; 1 locality undetermined, W. N. Lockington.
- OREASTER DORSATUS, L. 1 New Zealand, Messrs. Warwick and Argent; 1 Senegal, Dr. Isaac Lea.
- OREASTER (AMPHIASTER) INSIGNIS, Verrill. 1 locality undetermined, W. N. Lockington.
- OREASTER LÜTKENI, Bell. 1 locality undetermined.
- OREASTER OCCIDENTALIS, Verrill. 1 Honduras, Capt. J. M. Dow; 1 Lower California, W. N. Lockington (Fisher coll.); 1 dried and 1 alcoholic, Pacific Coast of Mexico, Dr. W. H. Jones.
- OREASTER RETICULATUS, L. 1 Maracaibo, C. D. Meigs; 1 Nassau, New Providence, Chas. P. Perot; 1 St. Bartholomew, West Indies, Dr. Gaës; 2 West Indies, E. Wilson; 1 locality undetermined, J. C. Fisher; 4 specimens, locality undetermined.
- CULCITA DISCOIDEA, Schmidt. 1 Zanzibar, Museum of Comparative Zoology.

#### ASTERINIDÆ.

- ASTERINA FOLIUM, Lütken. 2 alcoholic, locality undetermined.
- ASTERINA GIBBOSA, Penn. 2 Belfast Bay, W. Thompson; 1 Mediterranean, Dr. S. B. Howel; 1 locality undetermined, W. N. Lockington.
- ASTERINA GRANULOSA, Perrier. 1 (alcoholic) Oahu, Sandwich Islands, Dr. W. H. Jones.

- ASTERINA MINIATA, Brandt. 2 Monterey, Cal., W. M. Gabb; 2 San Diego, Cal., Jos. Jeanes; 2 locality undetermined, W. N. Lockington.
- ASTERINA OBTUSA, Gray. 1 locality undetermined, W. N. Lockington.
- ASTERINA REGULARIS, Verrill. 3 New Zealand, Messrs. Warwick and Argent.
- ASTERINA, species undetermined. 1 locality undetermined, W. N. Lockington.
- PALMIPES MEMBRANACEUS, Linck. 1 "Europe."
- ASTEROPSIS IMBRICATA, Grube. 1 Gulf of Georgia, Northwest Coast of America, Museum of Comparative Zoology; 1 Monterey, Cal., W. N. Lockington.

#### ASTROPECTINIDÆ.

- ASTROPECTEN ARTICULATUS, Say. 1 (alcoholic) 9-12 ft. off Maunatee, Tampa Bay, Fla., Heilprin coll. 1886; 1 South Carolina, F. S. Holmes; 1 dried and 4 alcoholic, localities undetermined.
- ASTROPECTEN AURANTIACA, Lam. 2 Mediterranean, Dr. T. B. Wilson.
- ASTROPECTEN OERSTEDII, Lütken. 2 San Diego, Cal., Jos. Jeanes (H. Hemphill); 4 locality undetermined, W. N. Lockington.
- ASTROPECTEN SUBINERMIS, M. and T. 1 (alcoholic) Mediterranean, Dr. Howel; 2 locality undetermined.
- ASTROPECTEN, species undetermined. 6 Gulf of Mexico, C. S. Westcott; 1 (alcoholic) Oahu, Sandwich Islands, Dr. W. H. Jones; 6 Sandwich Islands; 1 West Coast of Africa, Dr. Henderson, U. S. N.; 8 Yokohama, Japan, W. N. Lockington.
- LUIDIA CLATHRATA, Say. 4 Charleston, S. C.; 1 Cuba, W. M. Gabb; 3 (alcoholic) Stumps' Pass, West Coast of Florida, Heilprin coll. 1886; 2 locality undetermined.
- LUIDIA TESSELLATA, Lütken (?). 3 Lower California, W. N. Lockington; 2 Gulf of California, W. N. Lockington. These two last specimens are very large, measuring from 200 to 225 mm. from the center of the disk to the tips of the rays.
- CTENODISCUS CRISPATUS, Retzius. 11 (alcoholic) (40-50 fath.) and 5 dried Massachusetts Bay, U. S. Fish Commission; 1 Salem, Mass., W. N. Lockington (J. S. Kingsley); 1 locality undetermined, S. B. Howel.

*ARCHASTER TYPICUS*, M. and T. 1 California, 4 Lower California and 1 Mulege Bay, Low. Cal. (Fisher coll.), W. N. Lockington; 1 Sandwich Islands, W. H. Pease.

The specimen from the Sandwich Islands differs from the others by its narrower arms and greater number of arm plates, having about 40 on each side of an arm, whereas the others have only about 35. It differs also in color, being of a very light cream color instead of light or dark umber. This however may be due to the fading of the original tint. This species has not before been recorded either from the Pacific Coast of North America or from the Sandwich Islands.

#### PTERASTERIDÆ.

*PTERASTER TESSELLATUS*, Ives. A single type specimen in alcohol. Proc. Acad, 1888, p. 421. Kodiak, Alaska. Dr. W. H. Jones.

#### OPHIUROIDEA.

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*OPHIURA APPRESSA*, Say. 1 Callao, Peru, Dr. W. S. W. Ruschenberger; 3 Florida; 14 (alcoholic) locality undetermined.

*OPHIURA BREVISPINA*, Say. 1 Rhode Island, A. D. Bache.

*OPHIURA CINEREA*, M. and T. 5 Aspinwall, W. M. Gabb; 16 (alcoholic,) locality undetermined.

*OPHIURA PANAMENSIS*, Lütke. 1 California, W. M. Gabb; 2 (alcoholic) Panama (?), McNeil Expedition; 1 San Bartolomé Bay, Low. Cal., W. N. Lockington; 3 (alcoholic) San Diego, Cal., Jos. Jeanes; 1 alcoholic, West Coast of Mexico, Dr. W. H. Jones.

*OPHIURA TERES*, Lyman. 1 Cape Tortola, Low. Cal., and 1 locality undetermined, W. N. Lockington; 1 alcoholic, Nicaragua, Dr. Bransford; 3 dried and 7 alcoholic, West Coast of Mexico, Dr. W. H. Jones.

*OPHIOLEPIS ELEGANS*, Lütken. 1 (alcoholic) Sarasota Bay, Fla. (12 feet), Heilprin coll. 1886.

*OPHIOPLOCUS ESMARKI*, Lyman. 3 (alcoholic) San Diego, Cal., Jos. Jeanes; 1 (alcoholic) West Coast of America, George Davidson; 6 locality unknown, W. N. Lockington.

The number of arm spines to each side arm-plate in this species appears to be somewhat variable. In the specimen from the West



Coast presented by Mr. Geo. Davidson there are only two such spines, and in one of the specimens received from Mr. Lockington, some of the plates have two, and some three arm spines.

*OPHIOPLOCUS IMBRICATUS*, M. and T. 1 Bay of Islands, New Zealand, W. N. Lockington.

*OPHIONCUS GRANULOSUS*, Ives. Type specimen (Proc. Acad. 1889, p. 143), locality undetermined, W. N. Lockington.

*OPHIOLYPTA ALBIDA*, Forbes. 3 Belfast Bay, W. Thompson.

*OPHIOLYPTA CILIATA* Retzius. 3 Belfast Bay, W. Thompson ; 27 "British," E. Wilson.

*OPHIOLYPTA LOCKINGTONI*, Ives. 2 type specimens (Proc. Acad. 1889, p. 143), locality undetermined, W. N. Lockington.

*OPHIOLYPTA LÜTKENI*, Lyman. 4 dried and 2 alcoholic, locality undetermined, W. N. Lockington.

*OPHIOLYPTA NODOSA*, Lütken. 1 locality undetermined, W. N. Lockington.

*OPHIOLYPTA ROBUSTA*, Lyman. 3 Bay of Fundy, U. S. Fish Commission.

*OPHIOLYPTA SARSI*, Lyman. 3 dried and 7 alcoholic (20-125 fath.) U. S. Fish Commission.

*OPHIOPHOLIS ACULEATA*, Retzius. 1 Belfast Bay, W. Thompson ; 1 "British" ; 9 dried and 6 alcoholic, Maine, and 2 alcoholic, Nahant, Dr. J. H. Slack ; 12 (alcoholic) Massachusetts Bay and Gulf of Maine (10-100 fath.) U. S. Fish Commission ; 15 (alcoholic) Mt. Desert, Me., Dr. H. C. Chapman ; 6 locality undetermined.

*OPHIOPHOLIS CARYI*, Lyman. 1 (alcoholic), W. N. Lockington.

*OPHIOPHOLIS JAPONICA*, Lyman. 1 (alcoholic) Dr. S. B. Howel.

This specimen agrees closely with Mr. Lyman's description of *O. Japonica*. The arm spines, however, are slightly longer and also more slender, and there are on the upper surface of the disk a few scattered spines of about the size of the smallest arm spines.

*OPHIOPHOLIS KENNERLYI*, Lyman. 4 (alcoholic), West Coast of Mexico, and 11 (alcoholic) Alaska and California, Dr. W. H. Jones.

*OPHIACTIS MÜLLERI*, Lütken. 2 (alcoholic) Bermuda, Heilprin coll. July 1888.

These specimens which were identified as *Ophiactis Krebsii* in Professor Heilprin's "Contributions to the Natural History of the



Bermuda Islands" (Proc. Acad. 1888, p. 316), on further examination I am inclined to regard as *O. Mülleri*.

*OPHIACTIS SAVIGNYI* (= *O. virescens*, Lützk.) 3 (alcoholic), one of them parasitic in sponge, La Paz, Low. Cal., W. N. Lockington; 18 (alcoholic) Oahu, Sandwich Islands, Dr. W. H. Jones.

*AMPHIURA GEMINATA*, Lyman. 2 alcoholic, La Paz, Low. Cal., W. N. Lockington (Fisher).

*AMPHIURA SQUAMATA*, Chiaje. 4 Belfast Bay, W. Thompson; 2 England, E. Wilson.

*OPHIOCNIDA BRACHIATA*, Montagu. 1 England, Dr. T. B. Wilson.  
*HEMIPHOLIS ELONGATA*, Say. 1 Florida.

*OPHIONEREIS RETICULATA*, Lützk. 20 (alcoholic) Bermuda, Heilprin coll. July 1888; 1 Florida, T. R. Peale.

*OPHIOSTIGMA ISACANTHUM*, Say. 2 (alcoholic) Harrington Sound, Bermuda, Heilprin coll. July 1888.

*OPHIOCOMA ÆTHIOPS*, Lützk. 2 (alcoholic) Nicaragua, Dr. Bransford; Panama, 8 (alcoholic) McNeil Expedition and 1 dried, Capt. J. M. Dow; 1 West Coast of Honduras, Capt. J. M. Dow; 7 (alcoholic) West Coast of Mexico, Dr. W. H. Jones.

*OPHIOCOMA ALEXANDRI*, Lyman. 8 (alcoholic) Pichilique Bay, Dr. W. H. Jones.

*OPHIOCOMA CRASSISPINA*, Say. 2 Aspinwall Bay, W. M. Gabb; 1 (alcoholic) New Providence, Bahamas, Dr. H. C. Wood; 1 (alcoholic) North Rock, Bermuda, Heilprin coll. July 1888; 1 (alcoholic) locality undetermined.

*OPHIOCOMA ECHINATA*, Lam. (Lyman). 3 East Coast of Florida; 1 Gulf of Mexico. C. S. Westcott; 4 (alcoholic) Panama, McNeil Expedition; 21 (alcoholic) locality undetermined.

*OPHIOCOMA ERINACEUS*, M. and T. 4 (alcoholic) locality undetermined.

*OPHIOCOMA NIGRA*, M. and T. 1 Belfast Bay, W. Thompson; 1 "British," E. Wilson.

*OPHIOCOMA PICA*, M. and T. 1 (alcoholic) locality undetermined.

*OPHIOCOMA PUMILA*, Lütken. 1 (alcoholic) Bermuda, Heilprin coll. July 1888; 1 (alcoholic) locality undetermined, W. M. Gabb.

*OPHIOCOMA RHISEI*, Lützk. 1 Aspinwall Reef, W. M. Gabb; 1 (alcoholic) New Providence, Bahamas, Dr. H. C. Wood; 7 (alcoholic) locality undetermined.

- OPHIOCOMA SCOLOPENDRINA, Lam. 4 Enderbury Island, Phoenix Group, Dr. H. C. Eckstein.
- OPHIOPTERIS ANTIPODUM, E. A. Smith. 1 New Zealand, Messrs. Warwick and Argent; 2 locality undetermined, W. N. Lockington.
- OPHIOTHRIX ANGULATA, Say. 8 Florida.
- OPHIOTHRIX LINEATA, Lyman. 7 Key West, Fla., S. Ashmead.
- OPHIOTHRIX OERSTEDII, Lütke. 2 Key West, Fla., S. Ashmead; 6 (alcoholic) New Providence, Bahamas, Dr. H. C. Wood; 50 (alcoholic) locality undetermined.
- OPHIOTHRIX PENTAPHYLLUM, Pennant. 3 Belfast Bay, W. Thompson; 15 "British," Dr. Wilson.
- OPHIOTHRIX RUDIS, Lyman. 2 (alcoholic) West Coast of America, Geo Davidson; 3 locality undetermined, W. N. Lockington.
- The specimens of this species received from Mr. Lockington agree with Mr. Lyman's description, but the dorsal surface of the arms and disk is of a light bluish-gray and the upper arm plates are marked each by a central transverse darker band, with a lighter band on either side of it. The specimens received from Mr. Geo. Davidson answer to Mr. Lyman's description as to color, but have a light band on the outer edge of each upper arm plate. This light band is bordered on the inside by a faint line of darker.
- OPHIOTHRIX SPICULATA, Le Conte. 2 (alcoholic) Magdalena Bay, Low. Cal., W. N. Lockington; 4 (alcoholic) San Diego, Cal., Jos. Jeanes; 6 dried, West Coast of Low. Cal., and Gulf of California and 2 alcoholic locality undetermined, W. N. Lockington.
- I have found it so difficult to determine whether the above forms belong to *O. spiculata*, Le Conte or *O. dumosa*, Lyman that I think it probable that these two species represent varieties of one form. The color appears to be very variable.
- OPHIOTHRIX SUENSONII, Lütke. 1 (alcoholic) Nassau, New Providence, Dr. H. C. Wood.
- OPHIOMYXA FLACCIDA, Lütke. 1 (alcoholic) New Providence, Bahamas, Dr. H. C. Wood; 1 (alcoholic) Bailey's Bay, Bermuda, Heilprin July 1888; 7 (alcoholic) locality undetermined.

#### ASTROPHYTIDÆ.

- ASTROPHYTON COSTATUM, Seba. 1 South Carolina, F. S. Holmes; 1 Cuba, J. G. Howard; young specimen on Pterogorgia, West

- Indies, I. Lea ; 1 (alcoholic) Santa Cruz, West Indies, T. Davidson, Jr. ; 1 (alcoholic) West Indies, R. Swift.
- ASTROPHYTON PANAMENSIS*, Verrill. 5 (alcoholic) locality undetermined, McNeil Expedition.
- GORGONOCEPHALUS AGASSIZII*, Stimpson. 1 dried and 2 alcoholic off Cape Cod (25-35 fath.), U. S. Fish Commission ; 3 Maine, Dr. J. H. Slack ; 4 (alcoholic) Mt. Desert, Me., Dr. H. C. Chapman ; 1 (alcoholic) locality undetermined, Smithsonian Institution.
- GORGONOCEPHALUS ARBORESCENS*, Agassiz. 1 Palermo, Italy, John Ford.
- GORGONOCEPHALUS CARYI*, Lyman. 1 Monterey, Cal., and 1 locality undetermined, W. N. Lockington.
- GORGONOCEPHALUS STIMPSONI*, Verrill. 1 (alcoholic) Arctic Ocean. Smithsonian Institute, North Pacific Expedition ; 1 (alcoholic) Marmot Island, Alaska, Dr. W. H. Jones ; 1 locality undetermined, W. N. Lockington.
- ASTROSCHEMA LEVE*, Lyman (?). 1 locality undetermined.
- ASTROSCHEMA OLIGACTES*, Pallas. 1 locality undetermined.